

no longer needed any external form this function. At eight months weighed 3,117 g and could be removed from its isolation box which was

the weights of eight hand-reared cubs in Lincoln Park Zoo, Chicago, at 12 weeks. The largest was a male weighing 3,117 g, the smallest, also a male, weighed 2,296 g. Two of these cubs were raised on a diet of one teaspoon to 28 g of ground horsemeat to the ninth week. The largest cub was a jaguar cub listed by Crandall weighing 2,296 g at 45 days. It was reared on Esbilac.)

It is accepted that the nutritional status of the female is of initial importance in the offspring. More recent evidence from Morris Research Laboratories and Morris Research Laboratories states that the nutritional state of the female has far-reaching effects on the efficiency and upon the viability of the young.

The cub, an adult male jaguar, and the female (who died in 1962) were received in 1957 and were estimated to be 17 months old. They were fed irregularly on ground carcasses and, although they were frequently, produced no off-

spring. The present female, the cub's mother, was obtained on 4 September 1962 as an adult. She was also fed on the above diet and failed to produce young after observed matings. In November 1963 the diet was changed to raw chunks of horsemeat and in December 1963 this was again changed - to ground horsemeat. In January 1964 the present diet was established, consisting of ground horsemeat mixed with an equal amount of pellet dog meal² and with a powdered vitamin-mineral supplement added.³ The animals receive 2,950 to 3,400 g each of the mixture five days a week. On Tuesdays they are fasted. Since the introduction of the new diet two litters have been produced from this pair.

PRODUCTS MENTIONED IN THE TEXT

1. Esbilac (Borden Dairy Co, N.Y.) For composition see *Int. Zoo Yb.*, 4, 332.
2. Purina New Dog Meal (Ralston Purina Co, St Louis 2, Mo., USA).
3. Biovita, Jensen-Salsbery Laboratories, Kansas City, Mo., USA.

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number of different species, including lions. Phencyclidine is a synthetic compound which produces depression of the central nervous system, disorientation, tranquillisation and some loss of response to painful stimuli. It is not, however, a true anaesthetic. With high doses (1 mg/kg and above) it produces a plastic rigidity of muscles termed catalepsy. It also seems to interfere with the heat regulating mechanisms of the body; some animals show a progressive decline in rectal temperature while others develop hyperthermia.

For example, the author has observed rectal temperatures in deer which have risen as high as 43.9°C, with death occurring shortly afterwards. Despite the successful use of Phencyclidine in the case described below, it is important to realise that serious and even fatal toxic effects can occur. Great caution should always be used whenever immobilising drugs are employed.

The Snow leopard was brought to the University of Minnesota Veterinary Clinic in an aluminium crate, as described by Clifford and Fletcher

| TIME | HEART RATE | RESPIRATION RATE | RECTAL TEMPERATURE C | REMARKS |
|------|------------|------------------|----------------------|---|
| 1205 | 120 | 80 | | 24 mg Phencyclidine hydrochloride injected i.m. leopard in sternal recumbency; pupils appeared more dilated |
| 1208 | | | | no reaction to manipulation of the hindquarter |
| 1210 | | 60 | | no reaction to moving of crate |
| 1212 | | | | hindquarters raised by lifting tail; scrotum and testicles palpated; leopard growled but no movement of head or limbs |
| 1214 | | | | salivation |
| 1216 | | 46 | | scrotal region re-examined |
| 1218 | | | | 2 cm ejaculation probe inserted into rectum; no reaction |
| 1220 | | | | |
| 1222 | | 50 | | |
| 1225 | 76 | | | electrical stimulation caused copulatory reflexes and successful ejaculation of ca. 1 ml of semen |
| 1228 | | | | |
| 1234 | | 31 | 39° | strong, regular heart-beat; animal raised and rotated head slightly |
| 1236 | 106 | | | hip palpation caused leopard to raise head; dis-oriented |
| 1239 | | | | ejaculation probe re-inserted; no reaction |
| 1243 | | | | electrical stimulation caused copulatory movements and successful ejaculation of ca. 1 ml of semen |
| 1244 | | | | salivation; more alert |
| 1249 | | 52 | 39.5° | animal raised head; pupils dilated |
| 1255 | | | | animal raised head unsteadily for 10-second periods |
| 1300 | | | | disoriented; pupils dilated |
| 1305 | | 62 | | salivation; disorientation; positive pupil reaction to flashlight |
| 1318 | | 106 | | retracted fore-feet when prodded; appeared calm |
| 1335 | | 82 | | pulse strong and regular |
| 1345 | 112 | | | effects of drug decreasing; snarled if anyone approached cage |
| 1355 | | | | leopard returned to zoo; all reactions normal |
| 1605 | | | | |

Table 1. Reaction of a male Snow leopard *Panthera uncia* to i.m. injection of 24 mg of Phencyclidine hydrochloride.

Report on

the tranquillisation of a male Snow leopard for semen extraction

J. G. Mayo, Director, Duluth Zoo, Minnesota, USA

1. Big Cats, *Panthera leo*, *P. tigris*, *P. pardus*, *P. onca*, which reproduce successfully in captivity, the Snow leopard breeds in zoos.
 2. Snow leopards arrived at Como Zoo, Minnesota, from Czechoslovakia when they were 2 years old. They appeared to be healthy and it was observed that the female showed signs of oestrus. The

male did not exhibit any sexual interest in the female and copulation was never observed. It was therefore decided to attempt electro-ejaculation of the male in order to evaluate the functional status of his reproductive tract.

In order to facilitate examination it was decided to use a synthetic agent, Phencyclidine hydrochloride (Sernylan, Parke Davis) which the author had found to be effective in immobilising a

1. Unlike the other Big Cats
 2. *P. pardus* and *P. onca*
 3. fully relatively frequently
 4. leopard + snow leopard

5. A pair of snow leopard
 6. SA Ball from
 7. very well for 4 years
 8. P. pardus + P. tigris
 9. = female

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(1961). Its weight was ascertained to be approximately 48 kg. It was decided to use a fairly low dose of 0.5 mg/kg (24 mg total dose) of Phencyclidine hydrochloride as the author had found this dosage rate to be sufficient for tranquillisation in Big Cats. The drug was injected i.m. into the right hindquarter. Before injection the animal's respiration rate was 80 per minute and the heart rate 120 per minute. The animal was squeezed to one end of the crate by means of plywood panels. Although this procedure agitated it, the drug was administered without difficulty. After injection the panels were removed and the leopard moved across the crate and sat down. Observations made during tranquillisation and semen extraction are described in Table 1. It was decided to try and make the Snow leopard ejaculate by means of an electro-ejaculation device.¹ A rectal probe, 2 cm diameter, 20 cm long, was used with low (0 to 12 volts) but undetermined voltage output and a frequency of 28 to 30 cycles per second applied six times per minute. Testicular biopsy had been considered initially but had been rejected in favour of electro-ejaculation.

The semen was examined immediately after collection. The count and motility were both low

although there are no comparative data available. There were approximately 39,000 sperm per ml, with 65 per cent motility. Quantity was also low (2 ml from two ejaculations) but again, no comparative data on this aspect of feline reproductive physiology are available.

It was recommended that the pair of Snow leopards should be allowed outside during the winter to see if the colder temperatures might influence semen quality and the breeding behaviour of the male.

¹Plectron Ejaculator, Plectron Corp., Overton, Neb., USA

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Successful breeding of a cheetah *Acinonyx jubatus* in a private zoo

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Rome, Italy

On 13 January 1966 a male cheetah cub *Acinonyx jubatus* was born in a private collection of animals belonging to Mr L. Spinelli outside Rome. It was the first cheetah to be born in Italy and one of the very few ever to be born in captivity at all. Moreover, it was the first recorded instance of a cheetah born in captivity being successfully reared by its mother.

The female cheetah, 'Beauty', was about 13 months old when she arrived from Mogadiscio, Somalia. Thus she was about three years eight

months old when she gave birth. She has always been with Mr Spinelli since her arrival in Italy and she is very tame and extremely attached to her owner. She is taken for walks on a lead and always follows him freely. Her tameness and affection increased after the birth of her cub.

The cheetah's cage is on a hill, facing the sea, about 15 km away. The cheetah thus has the opportunity of ranging freely with its eyes over the country for miles, as cheetahs often do. This helps prevent the boredom which is so frequent

with captive cheetahs. There is a long 3 m wide, special exercise in. They and run freely.

The female arrived from Italy. He died left in the cage could become.

Oestrus has female. During more playful, and rubs her back she arches her is a slight swell visible (normal) damp with a vaginal discharge noticed each day in vocalisation in urination. After came into oestrus. From then on about 15 days, 7-10 days (the

After the death of two male cheetahs. Zoo, with the Professor Ermanno the zoo since 1961 later died. At were estimated were about nine. They have always outdoor enclosure part of the zoo. for walks on a they were often was never observed have occurred.

Both males were September 1966 frightened and fled and stood in days they settled started to play. tion was not noticed, often each other. The for 25 days.